| <br> | Claims |  |
|------|--------|--|
|      |        |  |

| Application No. | Applicant(s)      |  |
|-----------------|-------------------|--|
| 10/616,792      | MC CONNELL ET AL. |  |
| Examiner        | Art Unit          |  |
| John Ricci      | 3712              |  |

| 1 | Rejected |
|---|----------|
| = | Allowed  |

| -   | (Through numeral)<br>Cancelled |
|-----|--------------------------------|
| [+] | Restricted                     |

| N | Non-Elected  |
|---|--------------|
| i | Interference |

| A | Appeal   |
|---|----------|
| o | Objected |

| E  | Claim        | ٦             |          |         | _   | _        | Date   |          |          |                | 7        | Cia          | im  | T              |          |        |          | ate             | -        |          |          | 7        | Г            | laim   | Т          |        |          | _        | Dat      | e        | _               | _        | - |
|--|--------------|---------------|----------|---------|-----|----------|--------|----------|----------|----------------|----------|--------------|-----|----------------|----------|--------|----------|-----------------|----------|----------|----------|----------|--------------|--------|------------|--------|----------|----------|----------|----------|-----------------|----------|---|
| The color of the |              | $\neg$        | П        | Т       | Т   | ٦        |        |          | П        | ГΠ             | T        |              | _   | Г              | П        |        | ΓĬ       |                 | $\neg$   | П        | Т        | ٦        |              | $\neg$ | Τ          | Т      | Т        | Т        | Т        |          | П               | ╗        | _ |
| 1     =     51     101     102     102     103     103     103     103     103     103     103     103     104     104     104     105     105     105     105     105     105     105     105     106     107     108     108     108     108     108     108     109   | ㅠ   교        | 2             |          |         | - 1 |          |        |          |          |                |          | <del>™</del> | E E | l              |          |        | Н        | - 1             |          | - 1      |          |          | <del> </del> | l E    |            | 1      | 1        |          | ı        |          |                 | ı        |   |
| 1   =   101   102   102   102   102   103   103   103   103   103   103   104   104   104   105   105   105   106   106   107   105   106   107   107   108   108   108   108   108   108   109   100   106   107   108   109 </td <td>ةِ∷ ا ﷺ</td> <td>įς (<u>ξ</u></td> <td></td> <td>Ţ</td> <td>- [</td> <td>- 1</td> <td></td> <td></td> <td>1</td> <td></td> <td></td> <td>] :∈</td> <td>ΞĒ</td> <td></td> <td></td> <td></td> <td>Ш</td> <td>- [</td> <td>- 1</td> <td>- [</td> <td>- 1</td> <td>1</td> <td>  i=</td> <td>  [5</td> <td></td> <td></td> <td>1</td> <td></td> <td>1</td> <td>l</td> <td></td> <td></td> <td></td>   | ةِ∷ ا ﷺ      | įς ( <u>ξ</u> |          | Ţ       | - [ | - 1      |        |          | 1        |                |          | ] :∈         | ΞĒ  |                |          |        | Ш        | - [             | - 1      | - [      | - 1      | 1        | i=           | [5     |            |        | 1        |          | 1        | l        |                 |          |   |
| 1     =     101     102     102     102     102     102     103     103     103     104     103     104     104     105     105     105     105     105     105     105     106     77     107     107     107     107     108     109     100     106     107     107     108     109   | <u>"</u>   ة | 5 4           | 4        | 1       | - { | - {      |        |          | 1        | 1              | - 1      | 1 -          | ō   | <b>!</b>       | 1        |        |          | - {             | - {      | - 1      | - 1      | - 1      | -            | ١ō     | - }        | 1      | 1        | 1        | 1        |          | 1               | - 1      |   |
| 102  |              | _             | _        | +       | 4   | _        |        | Ь.       | Н        | $\vdash$       | -        | <u> </u>     |     | ⊢              | Щ        |        | Щ        | _+              | -        |          | +        | -        | -            |        |            | 4-     | ╄        | ⊢        | ╁-       | -        | Н               | 4        | _ |
| 3   103     4   103     5   106     5   106     7   107     8   108     9   100     10   100     10   100     10   100     10   100     11   11     12   62     13   63     14   114     15   65     16   66     17   66     17   66     17   66     18   68     19   69     119   69     119   120     20   70     71   121     22   73     74   122     23   73     76   128     28   76     28   77     77   127     28   78     30   128     32   128     33   131   |              |               | -        | 4       | 4   |          | _      |          | Ш        | $\sqcup$ 4     | _        | -            |     | <u> </u>       |          | _      |          |                 | -        | -4       | -        | 4        | -            |        |            | 4-     | ┼        | ↓_       | ⊢        | -        | _               | -        | _ |
| 54   104   105     55   106   106     7   107   107     8   107   107     9   100   100   100     101   60   110   109     101   60   110   111     112   62   112   112     13   63   113   114     14   64   114   114     15   65   115   115     16   66   116   117     17   67   117   117     18   68   118   118     19   69   119   119     22   77   71   121     22   73   123   123     24   74   74   124     27   77   75   128     28   78   128   129     33   131   134   134     34   134   134   134     35   128   132<  |              |               | _        | 4       | 4   | _        |        |          | Ш        |                | _        | <u></u>      |     | L              | Щ        |        | Ш        | _               | 4        | _        | _        | _        | ļ            |        |            | 4      | ┺        | L        | ╄        |          | _               | _        | _ |
| 55   |              |               | <u>a</u> | ┸       | 4   |          |        |          |          |                |          |              |     | _              |          |        | Ш        | _               | _        | _        | _        | _        | _            |        |            | _      | _        | _        | 上        |          | $\Box$          |          |   |
| 6     7     106     107       7     57     108     107       8     108     109     109       9     60     110     110       10     60     110     111       11     62     112     112       13     63     113     112       14     64     114     144       15     65     115     115       16     66     116     117       17     67     117     117       18     66     118     119       19     68     118     119       20     70     120     120       21     71     121     121       22     72     122     122       23     73     123     124       24     74     124     124       25     75     125     125       28     76     126     127       77   |              |               | =        |         | _   |          |        |          | L        |                |          |              |     | L              |          |        | L        |                 |          | _        |          | _        |              | 104    | <b>1</b>   |        |          |          | L        | Ш        |                 |          |   |
| 7     8     107     108     9     108     9     108     199     108     199     100     110     111     111     111     111     111     111     111     112     133     133     133     133     134     144  | 5            | -             | =        | _  _    |     |          |        |          | $\Box$   |                |          | 1            | 55  |                | Ш        |        |          |                 |          |          | _1       |          |              |        |            | 1_     | 1_       |          |          |          |                 |          |   |
| 8   9   108   19     9   10   60   110     111   61   111   111     12   62   112   113     13   63   113   113     14   64   114   114     15   66   115   116     16   66   116   117     18   68   118   118     19   69   119   120     21   71   121   121     22   72   72   122     23   73   123   23     24   74   124   24     25   75   125   25     26   76   126   27     27   77   127   127     28   78   128   29     30   80   130   131     31   81   131   131     32   82   132   33     33   83   133   133   | 6            | 5             | Т        | Т       | П   |          |        | П        |          | $\Box$         |          |              | 56  | П              |          |        |          | 7               | П        | 7        | Т        |          |              | 100    | 3          | Т"     | Т        | П        |          | П        |                 | П        |   |
| 9  | 7            | 7             | $\neg$   | T       | 7   |          |        | П        | П        | $\neg$         |          |              | 57  | Г              |          |        | П        |                 | П        | $\neg$   | $\neg$   | 7        |              | 10     | 7          | Т      | Г        | Т        | Т        |          | П               | П        | _ |
| 9  | 8            | П             | $\neg$   | 7       | 7   |          |        |          |          | $\neg$         |          |              | 58  |                | П        |        |          | $\neg \uparrow$ | 7        | $\neg$   | $\neg$   | ┑        |              | 108    | 3          | 1      | 1        |          | Г        |          |                 | $\neg$   |   |
| 10   |              |               | $\neg$   | _       | 7   | ヿ        | _      | П        |          | -              | $\neg$   | -            |     | 1              |          | _      |          | _               | T        | 寸        | _        | _        |              |        |            | +-     | 1        | 1        | $^{-}$   | Т        | $\neg$          | ┪        |   |
| 11   |              |               | _        | +       | 7   | $\neg$   | _      | Н        | Н        | $\vdash$       | _        | $\vdash$     |     | $\vdash$       | Н        | т      | Н        | -1              | $\dashv$ | -        | $\dashv$ | _        |              |        |            | +-     | +-       | $^{-}$   | +        | Н        | $\neg$          | $\dashv$ | _ |
| 12   |              |               | +        | +       | +   | $\dashv$ | _      | $\vdash$ | Н        | -1             | $\dashv$ | -            |     | 1-             | $\vdash$ | Н      | Н        | -+              | ┪        | +        | +        | 4        | $\vdash$     |        |            | +-     | +        | 1-       | $\vdash$ | Н        | $\vdash$        | $\dashv$ | - |
| 13   |              |               | $\dashv$ | +       | +   | $\dashv$ | -      | Н        | Н        | Н              | $\dashv$ | -            |     | ┢              | Н        | -      | Н        | -               | $\dashv$ | $\dashv$ | +        | $\dashv$ | $\vdash$     | 111    | +          | +-     | +-       | +-       | ╁        | $\vdash$ | Н               | $\dashv$ | _ |
| 14   |              |               | +        | +       | +   | $\dashv$ |        | -        | Н        | $\vdash$       | -        | -            |     | <del>  -</del> | $\vdash$ | Н      | Н        | -+              | -        | +        | +        | -        | $\vdash$     | 144    | +          | +-     | +        | 1        | +        | -        | $\vdash$        | $\dashv$ | - |
| 15   |              |               | +        | +       | -+  | -        | -      | Н        | Н        | $\dashv$       | -        | -            |     | -              | Н        | -      | Н        |                 | $\dashv$ | -        | -+       | $\dashv$ | -            |        |            | +-     | ┰        | -        | $\vdash$ | Н        | $\vdash$        | $\dashv$ | _ |
| 16   |              |               | +        | +       | -   | -        |        | $\vdash$ | Н        | Н              | $\dashv$ | -            |     | ⊢              | Н        | Н      | Н        | -1              | 4        | -        | +        | 4        | $\vdash$     |        |            | +-     | +        | -        | ┰        | Н        | Н               | -        | _ |
| 17   |              |               | -+       | +       | -+  | 4        |        | Н        | Н        | <del>   </del> | -        | -            |     | -              | Н        | -      | Н        |                 | -+       | -        | +        | $\dashv$ | -            | 111    | 4          | +-     | ╌        | +        | +        | H        | $\vdash\dashv$  | -        | _ |
| 18   |              |               | +        | 4       | 4   | _        |        | Щ        | Ш        | $\sqcup$       | $\dashv$ | <u></u>      |     | <b>L</b>       | $\vdash$ | Ш      | Ш        | -               | 4        | _        | 4        | 4        | -            |        |            | 4      | ⊢        | -        | _        | Ш        | Н               | 4        |   |
| 19   |              |               | -+       | 4       | 4   | _        | $\Box$ |          | Ш        | Ы              | _        | <b> </b>     |     | _              | Щ        |        | Ш        | _               | 4        | 4        | _        | 4        | <u> </u>     |        |            | 4-     | ╄        | _        | ⊢        | Ш        | Н               | _        | _ |
| 20   | 18           | В             | _        | 4       | 4   | _        |        | L        | ш        | Щ              | _        | <u></u>      | 68  | _              | Ш        | _      | Ш        | _               | _        | _        | _        | _        | _            | 111    | 3          | ┸      | ╀        | 丄        | ᄂ        |          | $\Box$          | _        |   |
| 21     71     121       22     72     122       23     73     123       24     74     124       25     125     125       26     76     126       27     77     127       28     78     128       29     79     129       30     80     130       31     81     131       32     82     132       33     83     133       34     84     134       35     86     136       36     86     136       37     87     137       38     88     138       39     90     140       41     91     141       42     92     142       43     94     144       44     94     144       45     95     145       46     96     146       47     97   |              |               | $\perp$  | ᆚ       | _   |          |        |          |          |                |          |              |     | L              |          |        |          |                 | $\perp$  |          |          | _        |              |        |            | L      | _        | _        |          | _        |                 | _        |   |
| 22     72     122     123       24     74     124     124       25     75     125     126       26     76     126     127       27     77     127     128       29     79     129     30       30     80     130     131       31     81     131     131       32     82     132     33       33     83     133     134       34     84     134     134       35     86     135     135       36     86     136     137       33     87     137     33       37     87     137     33       39     99     139       40     90     140       41     91     141       42     92     142       43     94     144       44     94     144       44     94  |              |               | _        |         |     |          |        |          |          |                |          |              |     |                |          |        |          |                 | _1       |          | _        |          | L            |        |            |        | L        |          |          |          |                 | I        |   |
| 23     73     123       24     74     124       25     75     125       26     76     126       27     77     127       28     78     128       29     79     129       30     80     130       31     81     131       32     82     132       33     83     133       34     84     134       35     85     135       36     86     136       37     36     88       39     89     139       40     90     140       41     91     141       42     92     142       43     93     143       44     94     144       44     94     144       46     96     146       47     98     148   | 21           | 1             |          | _[      | _1  |          |        |          |          |                |          |              | 71  |                |          |        |          |                 |          |          |          |          |              | 12     |            |        |          |          |          |          |                 |          |   |
| 24     74     124     125     125     125     126     126     126     127     127     127     127     127     128     128     128     128     128     128     128     128     128     128     128     128     130     130     131     131     131     131     131     131     131     131     131     131     131     132     33     33     83     133     33     34 </td <td>_ 22</td> <td>2</td> <td><math>\Box</math></td> <td>Т</td> <td>Т</td> <td></td> <td></td> <td></td> <td></td> <td>П</td> <td>7</td> <td></td> <td></td> <td>Г</td> <td></td> <td></td> <td></td> <td></td> <td>П</td> <td></td> <td></td> <td>7</td> <td></td> <td></td> <td></td> <td>Т</td> <td>Г</td> <td>Г</td> <td></td> <td></td> <td></td> <td>╗</td> <td></td>   | _ 22         | 2             | $\Box$   | Т       | Т   |          |        |          |          | П              | 7        |              |     | Г              |          |        |          |                 | П        |          |          | 7        |              |        |            | Т      | Г        | Г        |          |          |                 | ╗        |   |
| 75   | 23           | 3             | П        | T       | Т   |          |        |          |          |                |          |              | 73  |                | П        |        |          | ٦               | П        | T        | Т        | 7        |              | 123    | 3          | Т      | T        | ,        |          |          | П               | ╗        |   |
| 75   | 24           | 4             | $\neg$   | $\top$  | 7   | $\neg$   |        |          |          | П              |          |              | 74  | Г              |          |        |          | 7               | 7        | _        | 7        | 7        |              | 124    | 1          | $\top$ | 1        |          | Т        |          |                 | $\neg$   |   |
| 26 76   27 77   28 78   29 79   30 80   31 81   32 82   33 83   34 84   35 85   36 86   37 86   38 136   39 88   39 89   40 90   41 91   42 92   43 94   44 94   44 94   46 96   47 97   48 98   148   | 25           | 5             | $\neg$   | 7       | 7   |          |        |          | П        | $\neg$         |          |              | 75  |                |          |        | П        |                 | $\neg$   | _        | $\neg$   | 7        |              | 12     | 5          | 1      | Т        | Т        | T        |          |                 | $\neg$   |   |
| 127  | 26           | 6             | $\neg$   | 7       | 7   |          |        | 7        |          | $\Box$         | _        |              |     |                | П        | П      |          | $\neg$          | ┪        | $\neg$   | $\neg$   | 7        |              | 126    | 3          | $\top$ | 1        |          | Т        |          |                 | ┪        | _ |
| 28 78   29 79   30 80   31 81   32 82   33 83   34 84   35 85   36 86   37 87   33 83   33 87   33 87   33 137   38 89   40 90   41 91   42 92   43 93   44 94   44 94   44 94   46 96   47 97   48 98   148   |              |               | $\neg$   | 十       | 7   |          |        | г        | П        | П              | $\neg$   |              |     | $\vdash$       |          | _      | П        |                 | _        | 7        | _        | _        | 1            |        |            | ┰      | T        | $\vdash$ | 1        | П        | $\neg$          | ╗        | _ |
| 129  |              |               | $\dashv$ | $^{+}$  | 7   |          |        | Н        | Н        | $\neg$         | $\neg$   | -            |     |                |          | П      | Н        | _               | 7        | _        | $\neg$   | _        |              |        |            | +      | +-       | 1        | †        |          |                 | ┪        | _ |
| 30   |              |               | -        | +       | -†  |          | _      | _        | Н        | $\dashv$       | $\neg$   |              |     | -              | Н        | -      |          | -+              | ┪        | -+       | -        | $\dashv$ | -            |        |            | +-     | ┰        | $\vdash$ | +-       | Н        | -               | ┪        | _ |
| 31   |              |               | -+       | ┿       | -+  | -        | -      | Н        | -        | Н              | -1       | -            |     | -              |          | Н      |          | -+              | -+       | -+       | +        | -        | -            |        |            | ╁      | +-       | +        | +-       | Н        | -1              | $\dashv$ | _ |
| 32 82   33 83   34 84   35 85   36 86   37 87   38 88   39 89   40 90   41 91   42 92   43 93   444 94   445 95   46 96   47 97   48 98   132   133 133   136 135   137 136   137 137   138 138   139 139   140 141   141 141   142 142   43 143   44 144   45 95   145 145   46 96   47 147   48 98   |              |               | -+       | +       | -+  | -        | -      | Н        | Н        | Н              | $\dashv$ | -            |     | -              | Н        | Н      | Н        | -               | $\dashv$ | -        | +        | -1       | $\vdash$     |        |            | ┰      | ┰        | ⊢        | ╌        | Н        |                 | -        | _ |
| 33 34   35 85   36 85   37 87   38 88   39 89   41 91   42 92   43 93   44 94   44 94   45 96   46 96   48 98   148 98   |              |               | -        | +       | +   | -        | -      | $\vdash$ | Н        | $\dashv$       | $\dashv$ | <b>—</b>     |     | -              | $\vdash$ | -      | $\vdash$ | +               | -+       | -        | +        | $\dashv$ | $\vdash$     | 10     | +          | ╀      | +-       | $\vdash$ | -        | Н        | $\vdash$        | $\dashv$ | _ |
| 34   |              |               | -+       | +       | -+  | 4        | _      | Н        | Н        | Н              | $\dashv$ | -            |     | Н              | $\vdash$ | Н      | Н        | -               | -        | -        | +        | 4        | $\vdash$     | 134    | +          | ╀      | +        | -        | ┞        | Н        | $\dashv$        | -1       |   |
| 35   86   136   136   136   136   136   136   136   137   137   137   137   137   137   137   137   138   139   140   141   141   141   141   141   141   141   142   142   142   143   144   144   144   144   144   145   145   145   146   146   146   147   148    |              |               | +        | +       | 4   | 4        |        | Н        | Н        | Н              | -        | -            |     | $\vdash$       | $\sqcup$ | Н      | Н        | -4              |          | -        | +        | 4        | -            | 13     | <u>;</u> } | 4      | ╀        | -        | +        | Н        | Н               | 4        | _ |
| 36   |              |               | -        | +       | 4   | 4        | _      | Н        | Ш        | $\sqcup$       | -        | -            |     | $\vdash$       | Н        | Щ      | Щ        | 4               | 4        | 4        | +        | 4        | $\vdash$     |        |            | 4      | $\vdash$ | -        | ↓_       | Ш        | $\dashv$        | 4        | _ |
| 37   |              |               | -+       | +       | 4   | 4        |        | $\vdash$ | Ш        | Ш              |          | -            |     | ⊢-             | Ш        | Щ      | $\sqcup$ | _               | _        | 4        | 4        | 4        | <b> </b>     |        |            | 4      | ₩        | 1        | 1        | Ш        | Н               | 4        | _ |
| 38   88   138   139   140   140   141   142   142   143   144   144   145   145   146   146   147   148    |              |               | -        | 4       | 4   | _        |        | Ы        | Ш        | Ш              | Щ.       | <u> </u>     |     | $\vdash$       | Ш        | Ш      | Ш        | 4               | _        | 4        | 4        | 4        | $\perp$      | 130    | 1          | 4      | ـــ      | _        | 1        | ш        | 1               | 4        | _ |
| 39   |              |               | 4        | 4       | 4   | _        | Ш      | $\Box$   | Ш        | $\sqcup$       | _        | <u></u>      |     | L.             | Ш        | Ш      | Щ        | _               | _        |          | 4        | 4        | $\vdash$     |        |            | 4      | 1        | $\perp$  | 1        | Ш        | $\Box$          | _        |   |
| 40   |              |               | _        | _       | 4   |          |        |          | Ш        | Ш              | _        | L_           |     | $\vdash$       | Ш        |        |          | _               | _        | _        | _        | $\perp$  | L            | 138    | 1          | 4      | 1        | L.       | L        | Ш        |                 | _        |   |
| 41   |              |               | _        | $\perp$ |     |          |        | لبا      |          | Ш              | Ш        |              |     |                | $\Box$   |        |          |                 | _        |          | $\perp$  | ╝        |              | 139    | ) [        | L      |          | L        | L        |          |                 |          |   |
| 42   |              |               |          | I       | I   |          |        |          |          |                |          |              |     |                |          |        |          | $\Box$          | $\Box$   |          | $\perp$  |          |              |        |            | $\Box$ | L        | Г        |          |          |                 |          |   |
| 43 93 143 144 44 94 145 145 145 145 146 96 146 97 147 147 98 98 148 148 1  |              |               | ┚        | ⅃       | I   |          |        |          |          |                |          |              |     | $\Box$         |          |        |          | ┚               | J        | J        |          |          |              |        |            | Г      | L        |          | Ι_       |          |                 | ╝        | _ |
| 44   |              |               | $\Box$   | I       | J   |          |        |          |          |                | ı.       |              |     | Ľ              |          |        |          |                 | J        | J        | I        |          |              |        |            | Г      |          | 匚        |          |          |                 |          | _ |
| 44   | 43           | 3             | Т        | T       | T   |          |        |          |          |                | 7        |              |     |                |          |        | П        |                 | Т        | 7        | Т        | ٦        |              | 143    | 3          | Г      | Τ        |          |          |          |                 | $\neg$   |   |
| 45   | 44           | 4             | Т        | Т       | T   | ٦        |        |          |          |                | П        |              | 94  |                | П        |        | $\Box$   | $\neg$          |          | $\neg$   | Т        | 7        |              | 144    | 1          | Т      | Т        |          | Γ        |          | $\neg$          | 7        |   |
| 46   | 45           | 5             | $\neg$   |         | 1   | $\neg$   |        |          |          |                |          |              |     |                |          |        |          | _               |          | 7        | $\neg$   | ٦        |              | 14     | 5          | Т      | $\top$   |          | Т        | П        | $\neg \uparrow$ | $\neg$   |   |
| 47 97 147 148 98 148 148 148 1   |              |               |          | $\top$  | 7   | $\neg$   |        | П        | П        | $\Box$         | $\neg$   |              |     |                | П        | $\neg$ |          | $\dashv$        | _        | 寸        | ┰        |          |              | 146    | 3          | 1      | $\top$   | Т        | 1        | П        | $\neg$          | ヿ        |   |
| 48   148   148   148   1   |              |               | _        | +       | 7   | ٦        |        | 7        | П        | $\dashv$       |          | _            |     | П              | М        | -      | $\dashv$ | 7               | 7        | 7        | $^{+}$   | ٦.       | $\vdash$     | 14     | -          | 1      | $^{-}$   | Ι-       | Τ_       | Н        | 7               | ヿ        | _ |
|  |              |               | 十        | $^{+}$  | 7   | ┪        | Н      | H        | Н        | -              | ヿ        |              |     | _              | $\vdash$ | _      | $\vdash$ | 7               | -        | $\dashv$ | +        | _        |              | 14     | 1          | 1      | 1        |          | ╁╴       | Н        | _               | 十        | - |
|  |              |               | _        | +       | +   | -        |        | Н        | Н        | Н              | $\dashv$ | -            |     |                | $\dashv$ |        | $\dashv$ | 7               | -        | $\dashv$ | +        | ┪        | -            |        |            | +-     | 1        | ✝        | +-       | -        | -               | 7        | - |
| 50 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1   |              |               | -        | +       | +   | $\dashv$ | Н      | -        | $\vdash$ | -              | $\dashv$ | h-           |     | Н              | $\dashv$ | -1     | $\dashv$ | -               | +        | $\dashv$ | -+       | Н        | $\vdash$     |        |            | +-     | ╆╌       | -        | +-       | $\vdash$ | -+              | $\dashv$ | - |